

REPORT ON MACHINERY

No. 41392

Received at London Office

WED. OCT. 5 1921

Date of writing Report 19. 7. 21. When handed in at Local Office 1. 10. 1921. Port of Glasgow

No. in Survey held at 13933 on the S/S "Diplomat"

Date, First Survey 30. 9. 1919. Last Survey 29. 9. 1921

(Number of Visits 104)

Gross 8240
Tons Net 5255

Master Built at Glasgow By whom built 6 Boulton & Watt (1882) When built 1921
 Engines made at Glasgow By whom made 6 Boulton & Watt (1882) when made 1921
 Boilers made at ditto By whom made ditto (1882) when made 1921
 Registered Horse Power 871 Owners 6 Boulton & Watt S/S 6 29 Port belonging to Liverpool
 Shaft Horse Power at Full Power 4540 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines Brown Curtis OR Grand Turbine No. of Turbines 3 (H.P. & L.P.)
 Diameter of Rotor Shaft, Journals, H.P. 3. 2. P. 4. L.P. 6 3/4 Diameter of Pinion Shaft 6 7/8 L.P. 10 1/8
 Diameter of Journals 1 1/2 1 1/2 1 1/2 Distance between Centres of Bearings 2 1/2 2 1/2 2 1/2 Diameter of Pitch Circle 11 1/2 11 1/2 11 1/2
 Diameter of Wheel Shaft 16 3/4 Distance between Centres of Bearings 6 11 1/2 Diameter of Pitch Circle of Wheel 60 1/2 60 1/2 60 1/2
 Width of Face 18 1/2 18 1/2 18 1/2 Diameter of Thrust Shaft under Collars 16 1/4 Diameter of Tunnel Shaft as per rule 15 3/8
 No. of Screw Shafts 16 1/4 Diameter of same as fitted 14 1/4 Diameter of Propeller 18 6 Pitch of Propeller 17 3
 No. of Blades 4 State whether Moveable Yes Total Surface 108 0 Diameter of Rotor Drum, H.P. L.P. Astern
 Thickness at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbine 1250 1250 1250 Propeller 80

PARTICULARS OF BLADING.

	H.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION									
2ND									
3RD									
4TH									
5TH									
6TH									
7TH									
8TH									

No. and size of Feed pumps 3 1 Pair of 9 1/2 x 24" on Lamont Harbour Fed 4 1/2 x 6 x 6
 No. and size of Bilge pumps 2 1 Lamont 6 x 6 x 6 1 Lamont 9 x 10 x 10
 No. and size of Bilge suction in Engine Room 2. 2 1/2 1/2 Stalhold 2. 2 1/2 1/2 Tunnel 1-3 Spauld 1-3 1/2
 In Holds, &c. 2. 3 1/2 in each hold 11 1/2 - 2 2 1/2

No. of Bilge Injections 9 sizes 9 Connected to circulating pump Is a separate Donkey Suction fitted in Engine Room & size 3 1/2
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Both
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes
 What pipes are carried through the bunkers None How are they protected Yes
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper E.R. Platform
 Total Heating Surface 2DE + 2SE Boilers = 13452 sq ft Manufacturers of Steel Steel Co of Scotland 2 Double ended

BOILERS, &c.—(Letter for record 13452) Is Forced Draft fitted No No. and Description of Boilers 2 Double ended
 Working Pressure 200 Tested by hydraulic pressure to 350 Date of test 12-11-20 No. of Certificate 15580
 Can each boiler be worked separately Yes Area of fire grate in each boiler 126.5 sq ft No. and Description of Safety Valves to each boiler 2 Double ended Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 21" Mean dia. of boilers 15.9" Length 17.6" Material of shell plates S
 Thickness 1 1/2" Range of tensile strength 30/34 Are the shell plates welded or flanged Descrip. of riveting: cir. seams TR
 long, seams TR + DBS Diameter of rivet holes in long, seams 19/16" Pitch of rivets 10 1/2" Length of plate or width of butt straps 22 1/2
 Per centages of strength of longitudinal joint rivets 84.5% Working pressure of shell by rules 210 Size of manhole in shell 16 x 12
 plates 85.7% Size of compensating ring 8 x 1 1/2 No. and Description of Furnaces in each Boiler 6 Boulton & Watt Material S Outside diameter 40
 Length of plain part top 21 1/2 Description of longitudinal joint weld No. of strengthening rings 15/16
 bottom 21 1/2 Thickness of plates 3/4 Back 3/4 Bottom 15/16
 Working pressure of furnace by the rules 213 Combustion chamber plates: Material S Thickness: Sides 3/4 Back 3/4 Bottom 15/16
 Pitch of stays to ditto: Sides 9 1/2 x 9 1/2 Top 9 1/2 x 9 1/2 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 218
 Material of stays S at smallest part 1.085 Area supported by each stay 87.89 Working pressure by rules 203 End plates in steam space
 Material S Thickness 1 1/4 Pitch of stays 2 1/4 x 1 1/4 How are stays secured DN Working pressure by rules 212 Material of stays S
 Diameter at smallest part 7.49 Area supported by each stay 334.6 Working pressure by rules 232 Material of Front plates at bottom S
 Thickness 1 1/8 Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes 3 1/4 Pitch of tubes 4 9/16 x 4 1/2 Material of tube plates S Thickness: Front 1 1/8 Back 7/8 Mean pitch of stays 1 1/25
 Pitch across wide water spaces 14 1/4 Working pressures by rules 224 Girders to Chamber tops: Material S Depth and
 Thickness of girder at centre 10 1/2 x 2 Length as per rule 40 1/4 Distance apart 93/8 Number and pitch of stays in each 3 at 93/8
 Working pressure by rules 202 Steam dome: description of joint to shell % of strength of joint Diameter
 Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets
 Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type *Schmidt* Date of Approval of Plan *24 Oct. attached* Tested by Hydraulic Pressure to *600 lb*
Date of Test *24 Oct. attached* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *yes*
Diameter of Safety Valve *2"* Pressure to which each is adjusted *20* Is Easing Gear fitted *yes*

IS A DONKEY BOILER FITTED? *NO* If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—*2 Ball's nuts for each end of Rotor Bearing, ditto for Main Gear Shaft*
2 Ball's nuts for Pinion Bearing 1 Set of Coupling bolts of each end used. 1/20" of Steel Rod 10 lb. nuts for each gear end
1/20" of Steel Rod for each Turbine Pinion joint. 2 Turnbuckles for oil circulating system. 1 Set of Main Bearing for
the gear shaft. 1 Set of Bearing bushes for Rotor. 1 Set of Bearing bushes for Pinion shaft. One half set of
ring for each gland of Rotor shaft. 1 half set of Springs fitted. Sufficient Parts for one pair of Mitchell Thrust. 1
union for adjusting block of different thicknesses. 1 Set of Fuel pump valve. ditto for Bilge 1 Set of Lubrication
oil pump. 1 Bucket for lubricating oil pump. 1 brass valve opening for each end fitted a quantity of
amalgam bolts nuts studs Bars plates of Steel

The foregoing is a correct description,
DUNSMUIR & JACKSON, Limited.

Manufacturer.

Dates of Survey while building
During progress of work in shops --- *1919 Sep 30. Oct 9 Nov 18-25 Dec 5-8-16-19 1920 Jan 12-16-21-28-30 Feb 5-10-17-26 Mar 2-9-11-15-17-23 Apr 1-18-20*
During erection on board vessel --- *May 3-18-19-23-28 Jun 4-9-17-21-23-29 July 7-13-14 Aug 11-27-31 Sep 8-10-15-16-17-21-30 Oct 1-5-14-18-21-25 Nov 3-12-16-22-24-26-29*
Total No. of visits *104.* Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Casings *5-10-20* Rotors *24-11-20* Blading *14-10-20* Gearing *25-10-20*
Rotor shaft *13-12-20* Thrust shaft *6-12-20* Tunnel shafts *13-12-20* Screw shaft *12-11-20* Propeller *24-11-20*
Stern tube *24-11-20* Steam pipes tested *10-2-21* Engine and boiler seatings *13-12-20* Engines holding down bolts *3-3-21*
Completion of pumping arrangements *22-3-21* Boilers sized *16-2-21* Engines tried under steam *29-9-21*
Main boiler safety valves adjusted *31-3-21* Thickness of adjusting washers *P 9/32 S 9/32 P 19/64 S 7/32 P 3/8 S 5/16 P 3/8 S 1/32*
Material and tensile strength of Rotor shaft *S 31-35 ksi* Identification Mark on Do *LLOYDS RMC*
Material and tensile strength of Pinion shaft *S 40-45 ksi* Identification Mark on Do *482 WGM*
Material of Wheel shaft *S* Identification Mark on Do *1577 BI WGM* Material of Thrust shaft *S* Identification Mark on Do *LLOYDS*
Material of Tunnel shafts *S* Identification Marks on Do *WGM 482* Material of Screw shafts *S* Identification Marks on Do *482*
Material of Steam Pipes *9 non* Test pressure *600 lb*

Is an installation fitted for burning oil fuel *yes* Is the flash point of the oil to be used over 150°F. *yes*
Have the requirements of Section 49 of the Rules been complied with *yes*
Is this machinery a duplicate of a previous case *910* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, etc.) *These Engines Boilers have been built under special survey in accordance with the approved plans. The workmanship, material are of good quality. They have been securely fitted on board. Found in all respects satisfactory, are in my opinion eligible for the record of LMC 9.21. fitted with oil fuel 9.21 F.P. above 150°F*
It is submitted that this vessel is eligible for THE RECORD. + LMC 9.21. CL.

The amount of Entry Fee ... £ *6* : - :
Special ... £ *1/8* : *11* :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, *4.10.1921*
When received, *8.10.1921*

Committee's Minute

Assigned *+ LMC 9.21.*

Fitted for oil fuel 9.21 F.P. above 150°F

MACHINERY DEPT. WRITTEN *6.10.21* *13.10.21*

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